UNITED STATES MARINE CORPS
Supply School
Marine Corps Combat Service Support Schools
PSC 20041
Camp Lejeune, North Carolina 28542-0041

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AUG 99

STUDENT OUTLINE

HAZARDOUS MATERIAL

LEARNING OBJECTIVES:

TERMINAL LEARNING OBJECTIVE: Given a listing of research material for classification, suspected hazardous material, and the references, research publications, directives, and correspondence to identify hazardous material, in accordance with CF Title 49, IATA, ICAO, IMDG, MCO 4450-12, and MCO P4030.19_. (3043.05.05)

ENABLING LEARNING OBJECTIVES:

1. With the aid of reference and given an example of shipping labels, select from a list the hazardous material classification for the appropriate label, in accordance with MCO 4450-12. (3043.05.05a)

2. Given a written situation pertaining to the storage of hazardous material, a list of hazardous material, and the reference, select from a list the appropriate storage area, in accordance with MCO 4450-12. (3043.05.05b)

OUTLINE

BACKGROUND

a. General. There is no other single group of commodities that requires the degree of specialized handling as the group described as hazardous material (HM). Failure to properly identify, store, and handle such material can cause serious health risks and property damage if mishandled.

b. Prerequisite. The prerequisite to safe and effective storage and handling of HM is the accurate identification and proper classification of these materials. Some easier ways HM can be identified are by using forms like placards, labels, product fact literature, and warning statements.

It is important to know that in no way does this relieve you of the responsibility to be fully aware and know the potential hazards that may be involved when dealing with HM.

SHIPPING LABELS

a. General. Shipping labels are valuable indicators that are attached to packages of HM being transported and are used to indicate the hazard class. There are two types of shipping labels that can be used: Domestic and International.

(1) **Domestic Shipping Labels**. These are labels that are attached to containers shipped within United States. These are the most widely recognized and understood labels used for distinguishing hazardous material. **You will find examples of these domestic shipping labels in MCO 4450-12 starting on page 2-9.**

(2) **International Shipping Labels**. These are required for materials that are being shipped by commercial air or by commercial water carrier. Most of the domestic labels are the same as the international labels with the exception of explosives and infectious substances. **You will find examples of international shipping labels in MCO 4450-12 starting on page 2-12.**

b. Marking and Other Indicators. Installations receiving material that is not regulated during transportation can present a storage hazard to personnel, facilities, or the environment if in sufficient quantities. Exterior container markings are required and are specified in the contract with the supplier.

c. Material Safety Data Sheets (MSDS). It is required that a Material Safety Data Sheet (MSDS) is provided for each type of HM that is shipped. MSDSs must be reviewed for technical accuracy and consistency. If a MSDS is not received with the shipment of a locally-purchased chemical, the contracting official should follow up with the supplier to obtain a satisfactory MSDS. **Refer to MCO 4450-12 page 2-7 for an example of a MSDS.**

STORAGE

a. Requirements. HM has characteristics that require the materials to be specifically stored or handled to prevent risks to personnel or to the facility in which they are stored. The use of placards and labels help to ensure the material is safely transported to the designated storage area, but does not apply to the actual storage of material.

b. Storage Facilities. There are several different types of storage facilities (i.e. GP, Refrigeration, HM facility, open storage, etc...). Within these facilities there are two defined areas that are required.

(1) Separate Inside Storage. This is a room or building used for the storage of materials in containers or portable tanks, separated from other types of storage occupancies.

(2) Segregated Storage. This is when materials are physically separated by sills, curbs, and distance.

c. HM Storage Areas. Storage areas provide separation of material with a concept of reducing the risks of hazardous reactions. **Refer to MCO 4450-12 starting on page 4-5 for examples.** The ten areas of HM storage are:

(1) A - Radioactive **(TWO TYPES OF RADIATION HAZARDS, EXTERNAL AND INTERNAL EXPOSURE. ITEMS CAN BE IDENTIFIED BY NSN OR PART NO)**

(2) C - Corrosive **(MATERIALS THAT HAVE DESTRUCTIVE EFFECT ON TISSUE, STEEL, AND ALUMINUM)**

(3) D - Oxidizer **(MATERIAL THAT GIVES OFF OXYGEN OR OXIDIZING GASES (I.E. CHLORINE, BROMINE, FLUORINE, ETC.))**

(4) E - Explosive **(AMMUNITION AND EXPLOSIVES)**

(5) F - Flammable **(VAPORS RATHER THAN LIQUIDS IN THE AIR AND IGNITION SOURCE CAUSE FIRE)**

(6) G - Gas, Compressed **(POISONOUS, FLAMMABLE, CORROSIVE, REACTIVE, OXIDIZING OR OTHER HM)**

(7) L - Low Hazard **(ASSIGNED ON THE BASIS OF PHYSICAL AND CHEMICAL PROPERTIES)**

(8) P - Peroxide, Organic **(FIVE DIFFERENT CLASSES SEPARATED BY INTENSITY OF FLASHPOINT)**

(9) R - Reactive **(AIR AND WATER REACTIVE MATERIALS (I.E. DANGEROUS WHEN WET MATERIALS))**

(10) T - Poison **(CAN CAUSE PERSONAL INJURY BY INHALATION, SKIN ABSORPTION, OR INGESTION)**

d. Hazard Characteristic Codes (HCCs). To reduce the risk of hazards related to the incorrect classifications or categorizations by untrained personnel, a two digit alphanumeric code has been developed to assist personnel in receiving, storing, and issuing material categorized by law or regulations as hazardous. Use of the HCCs assures uniformity in the identification and management of HM and will help facilitate spill response and recoupment operations.

SAFETY

a. General. There are many dangers associated with the receipt, storage, and handling of HM. Personnel accidents associated with any warehousing operation can have an adverse effect on productive man-hours and mission accomplishment.

b. Responsibility. There are many people that have responsibilities when it comes to safety while working with HM. They are:

(1) Installation Commanders. They have the responsibility to ensure that the workplace is free of recognized hazards that cause, or are likely to cause, death or serious physical harm.

(2) Supervisors. They are responsible to ensure that personnel are trained to work safely. They will also enforce safety and health standards and will correct any unsafe conditions.

(3) Employees (Marines). They are responsible to report any violations of safety regulations that they might discover. They are also required to use safety equipment and personal protection equipment (PPE) while handling HM.

c. Safe Handling Procedures. Workers must be conscious to the fact that damage to a pallet or outer container will often result in a spill, an accident, or damage to the material. The goal of material handling practices would be to prevent accidents or spills that damage the environment and damage to the material being moved, either directly or indirectly. Everyone should be familiar with the following procedures:

(1) Avoid handling incompatible materials at the same time.

(2) Select the proper piece of equipment to move specific items.

(3) Safely operate Material Handling Equipment (MHE).

(4) Report spills when they occur.

(5) Identify items as HM prior to moving them.

(6) Properly use personal protection equipment.

d. Protective Equipment. Personal Protective Equipment (PPE) is required for the processing of environmental, chemical, and radiological hazards. This equipment should offer protection to the eyes, face, head, and extremities and must be maintained in a sanitary and reliable condition. The type of PPE that maybe required to use will depend upon the type of HM that is being handled.

SPILL CONTINGENCY PLAN

a. General. Federal installations are to respond to their own oil and hazardous substance spills. Thorough preplanning of oil and hazardous substance spill response is necessary so that

when a spill occurs, facility personnel can respond quickly and effectively, minimizing damage to human health and the environment.

b. Installation Spill Contingency Plan (ISCP). These plans contain certain types of advanced preparedness information, including amounts and locations of response equipment and materials, but are primarily oriented toward specifying procedures to be followed during the event of a spill. **These ISCP procedures can be found in MCO 4450-12 starting on page 8-4.**